APPENDIX E

Current Status of Virginia's TMDL Program

In 1997, the Virginia General Assembly enacted the Water Quality Monitoring, Information, and Restoration Act (WQMIRA), §62.1-44.19:4 through 19:8 of the Code of Virginia. This statute directs DEQ to develop a list of impaired waters, Total Maximum Daily Loads (TMDLs) for each impairment, and implementation plans for these TMDLs.

Cooperative Effort

DEQ administers the TMDL process for Virginia and formally submits the TMDLs to EPA for approval. Once EPA approves a TMDL, the Virginia State Water Control Board must also approve it. The Department of Conservation and Recreation (DCR) and the Department of Mines, Minerals, and Energy (DMME) have signed Memoranda of Understanding with DEQ agreeing to a cooperative effort in the TMDL and Implementation Plan development processes. DCR has the primary lead for the development of TMDL Implementation Plans for nonpoint source TMDLs. DCR also provides assistance pertaining to nonpoint source issues during the TMDL development process. DMME assists with the development and implementation of TMDLs involving pollutants from mineral extraction activities. The Virginia Department of Health also participates in a cooperative effort by assisting in the development of TMDLs and TMDL IPs for impaired shellfish waters.

TMDL Schedule

In 1998, the American Canoe Association and the American Littoral Society filed a complaint against the EPA for failure to comply with the provisions of §303(d) of the Clean Water Act in Virginia. As a result, EPA signed a Consent Decree with the plaintiffs in 1999 that contains Virginia's TMDL development schedule through year 2010. Also under the Consent Decree, EPA agrees to develop TMDLs on these impaired waters to meet the schedule if Virginia fails to do so.

Under the Consent Decree schedule, Virginia has to develop TMDLs for 644 segments of impaired waters by 2010. As of September 2005, EPA has approved 178 TMDLs covering 129 Consent Decree waters as well as several non-Consent Decree waters (see TMDL Activity Summary below). The approved TMDLs address impairments in waters designated for recreational uses, shellfishing and/or aquatic life, and call for reductions in pollutants such as bacteria, sediment, nutrients and toxicants. Additional TMDLs will be completed in time to meet the Consent Decree requirements for the court-ordered May 1, 2006 deadline. A complete list of EPA-approved and draft TMDLs is maintained on DEQ's TMDL web site at http://www.deq.virginia.gov/tmdl

Table E-1. TMDL Activity Summary

TMDL Activity from 1/1/99 to 9/30/05									
	Total	Bacteria	Benthic	PCB	Nitrate	pH	DO	Ammonia	Temp
TMDLs Completed [1] (CD and Non CD)	178	107 shellfish 13	51	5	2	0	0	0	0
CD segments	129								
CD Delistings	43 [2]								
- full	38	17	5		1	5	5	1	4
- partial	6	2	3			1			

1 Does not include delists

2 One CD segment was delisted for two pollutants

Waters that have been identified as impaired after the Consent Decree are scheduled for TMDL development within 12 years of their initial listing in the 305(b)/303(d) Water Quality Assessment Integrated Report. Whenever possible, DEQ tries to combine such waters and impairments with Consent Decree waters and impairments in a watershed-based approach to TMDL development.

Following a period of public comment, DEQ recently developed the TMDL development schedules for impaired streams, lakes and estuaries as well as for impaired shellfish waters for the next biennium ending May 1, 2008. The schedule can be found at http://www.deq.state.va.us/tmdl/2008.html.

TMDL Implementation Plans

Section 303(d) of the Clean Water Act, and current EPA regulations do not require the development of TMDL implementation strategies. However, the Code of Virginia directs DEQ in section 62.1-44.19.7 to "develop and implement a plan to achieve fully supporting status for impaired waters". The Act also establishes that the implementation plan shall include the date of expected achievement of water quality objectives, measurable goals, corrective actions necessary and the associated cost, benefits and environmental impact of addressing the impairments. To date Virginia has completed and is implementing ten TMDL implementation plans that address 30 of the EPA-approved TMDLs (see Table E-2 for river basin specific information). The DEQ TMDL web site listed above contains the completed TMDL implementation plans, a guidance manual for the development of TMDL IPs, as well as the first success stories of measurable water quality improvements in impaired waters.

Table E-2. TMDL Implementation Plans by River Basin (through September 30, 2005)

Basin	IPs Completed	# of segments in completed IPs	IPs Under Contract/in Planning	# of segments in pending IPs
Chowan	1	9	0	0
James	2	2	0	0
New	0	0	2	3
Potomac, Shenandoah	4	10	4	9
Rappahannock	0	0	2	7
Roanoke	1	4	2	8
Tennessee, Big Sandy	2	5	3	5
Shellfish	0	0	1	2
Total	10	30	14	34

TMDL Success Stories

As reported in the 2005 Report on Watershed Planning and Permitting, improvements toward water quality goals are occurring in several areas:

- A recent evaluation of water quality trends in the Shenandoah Valley demonstrates improving conditions and suggests that TMDL efforts are paying off. Rates of violation of the bacteria water quality standard in 82 valley streams were assessed for the 2000-2005 period and compared to the 1995-2000 period. Of those streams, 70% had improved over the past five years, and only 28% had degraded. Some improvements were large (as high as 52%), and 10 of the top 13 streams with the largest improvements have been the focus of TMDL activities.

- DEQ, DCR, and the Shenandoah Valley Soil and Water Conservation District teamed to hold a series of public meetings to "celebrate" observed water quality improvements in the Dry River, Muddy Creek, and Mill Creek TMDL implementation areas and to thank local citizens for their participation in agricultural BMP programs. Due to TMDL implementation activities,

these streams have experienced 19-29% improvements in bacteria violation rates and have experienced the highest benthic aquatic life ratings ever observed on these streams.

- DCR, in cooperation with the City of Harrisonburg, Rockingham County, and other local stakeholders have been working to develop an IP for Cooks Creek and Blacks Run. Blacks Run has been chosen by the Canaan Valley Institute [CVI] as an urban stream demonstration project area. CVI has provided technical assistance and funding for a stream restoration project on Blacks Run that will restore natural stream channel design, provide riparian buffers, and assist in meeting sediment reduction goals called for in the Blacks Run TMDL.

- The Middle Fork Holston River TMDL implementation project in Washington County was recognized by EPA as Virginia's watershed success story for 2005.

- DCR in cooperation with the Peter Francisco Soil and Water Conservation District led the development of an IP for the Willis River watershed in Buckingham and Cumberland Counties and is pursuing the implementation of BMPs.

- Three projects are currently being administered by DMME in TMDL watersheds to improve the chemical and biological quality of the impaired stream segments.

    - In Black Creek, Wise County, the agency has initiated a riparian zone restoration project for the lower 1.5 mile segment of the stream. The goal is to improve aquatic habitat. The agency has partnered with the National Fish and Wildlife Foundation.

    - In the Powell River, Lee County, the agency has chemically improved 3.5 miles of stream through completion of the Ely Creek acid mine drainage wetland; a cooperative project between DMME and the U. S. Army Corps of Engineers. The second phase of the project has been initiated and will also consist of wetland construction in Puckett Creek. Ely Creek and Puckett Creek are tributaries to impaired segment of the Powell.

    - In the Guest River, Wise County, two abandoned mined land sites, one a coal tipple targeted in the IP, were reclaimed during 2005. DMME partnered with the Lonesome Pine Soil and Water Conservation District and the Tennessee Valley Authority on the project.

- To support additional citizen involvement in TMDL implementation areas, DEQ has provided training, support, and materials to assist local watershed groups in monitoring E. coli bacteria in their local TMDL water bodies. DEQ has provided these resources to several citizen monitoring groups across the state, and participants in the program include high school and college educators that are using the opportunity to educate students on water quality and monitoring methods. Date from these monitoring efforts can be used, among other things, to help target the implementation of Best Management Practices.